

1. A ventilator, comprising;
a primary electronic ventilator subsystem,
a backup pneumatic ventilator subsystem,
said backup pneumatic ventilator subsystem being
5 inoperative during primary electronic ventilator
operation,

said backup pneumatic ventilator subsystem being
operable during primary electronic ventilator subsystem
failure.

10 2. The ventilator of claim 1, wherein said
backup pneumatic ventilator subsystem further comprises
parameter tracking valves, said parameter tracking
valves being adjusted during primary electronic
ventilator subsystem operation and maintaining said
15 adjustments during said backup pneumatic ventilator
subsystem operation.

3. The ventilator of claim 2, wherein a first
parameter tracking valve is provided for maintaining
continuous positive airway pressure, during backup
20 pneumatic ventilator subsystem operation, at the level
provided during primary electronic ventilator operation.

4. The ventilator of claim 1, wherein a second
parameter tracking valve is provided for maintaining
tidal volume, during backup pneumatic ventilator
25 subsystem operation, at the level provided during
primary electronic ventilator operation.

5. The ventilator of claim 1, further
comprising a lockout mechanism to prevent operation of

said backup pneumatic ventilator subsystem during initial power up of said primary electronic ventilator subsystem.

5 6. The ventilator of claim 5, wherein said
lockout mechanism is a parameter tracking valve.

10 7. A ventilator, comprising;
 an electronically driven flow control valve,
 a microprocessor for controlling said
electronically driven flow control valve,
 a first pneumatically driven control valve,
 a first pneumatically driven timing unit for
controlling said pneumatically driven control valve,
 wherein said electronically driven flow control
valve operates at a first time, and
15 wherein said first pneumatically driven control
valve operates at a second time.

20 8. The ventilator of claim 7, further
comprising an electronically set flow control valve
connected to said first pneumatically driven control
valve.

 9. The ventilator of claim 8, wherein said
electronically set flow control valve is set during
operation of said electronically driven flow control
valve.

25 10. The ventilator of claim 7, wherein said
electronically driven flow control valve can be operated
to provide ventilation in a plurality of ventilatory
modes.

11. The ventilator of claim 7, further comprising;

a second pneumatically driven control valve,
a second pneumatically driven timing unit for
controlling said pneumatically driven control valve.

12. A ventilator, comprising:

a primary ventilator subsystem,
a supply valve operating in a plurality of modes,
a back-up ventilator subsystem, comprising;
a pneumatically operated valve,
a timing unit coupled to the pneumatically
operated valve for activating the pneumatically
operated valve, and
a flow rate control device connected to the
pneumatically operated valve for receiving an
output from said pneumatically operated valve,
wherein said supply valve provides a supply to
the primary ventilator subsystem under a first set of
operating conditions, and
wherein the supply valve provides a supply to the
back-up ventilator subsystem under a second set of
operating conditions.

13. A ventilator, comprising:

a ventilation flow rate control device;
a controller for adjusting the ventilation flow
rate control device;
wherein the controller can be operated in a first
mode to adjust the ventilation flow rate control device
to provide ventilation in a first set of ventilatory
modes;

wherein the controller can be operated in a second mode to adjust the ventilation flow rate control device to provide ventilation in a second set of ventilatory modes.

5 14. The ventilator of claim 13, wherein the first set of ventilatory modes is a subset of the second set of ventilatory modes.

10 15. The ventilator of claim 14, wherein said first ventilatory mode includes synchronized intermittent mandatory ventilation with continuous positive airway pressure.

 16. The ventilator of claim 15, wherein said second ventilatory mode includes controlled mechanical ventilation.

15 17. The ventilator of claim 15, wherein said second ventilation mode includes controlled mechanical ventilation with positive end expiratory pressure.

20 18. The ventilator of claim 15, wherein said second ventilation mode includes continuous positive airway pressure.

 19. The ventilator of claim 15, wherein said second ventilation mode includes synchronized intermittent mandatory ventilation.

25 20. The ventilator of claim 15, wherein said second ventilation mode includes synchronized

intermittent mandatory ventilation with continuous positive airway pressure.

5 21. The ventilator of claim 15, wherein said second ventilation mode includes pressure support ventilation.

10 22. The ventilator of claim 15, wherein said second ventilation mode includes synchronized intermittent mandatory ventilation with continuous positive airway pressure and pressure support ventilation.

 23. The ventilator of claim 15, wherein said second ventilation mode includes pressure controlled ventilation.

15 24. The ventilator of claim 15, wherein said second ventilation mode includes pressure controlled ventilation with continuous positive airway pressure.

 25. A method of operating a ventilator, comprising the steps of:

20 providing ventilation, in one instance, in one of a first set of ventilatory modes;

 disabling at least one ventilatory mode of said second set of ventilatory modes to create a first set of ventilatory modes;

25 providing ventilation, in a second instance, in one of said second set of ventilatory modes.

 26. The method of claim 25, wherein said first ventilatory mode includes synchronized intermittent

mandatory ventilation with continuous positive airway pressure.

5 27. The method of claim 26, wherein said second ventilatory mode includes controlled mechanical ventilation.

28. The method of claim 26, wherein said second ventilation mode includes controlled mechanical ventilation with positive end expiratory pressure.

10 29. The method of claim 26, wherein said second ventilation mode includes continuous positive airway pressure.

30. The method of claim 26, wherein said second ventilation mode includes synchronized intermittent mandatory ventilation.

15 31. The method of claim 26, wherein said second ventilation mode includes synchronized intermittent mandatory ventilation with continuous positive airway pressure.

20 32. The method of claim 26, wherein said second ventilation mode includes pressure support ventilation.

33. The method of claim 26, wherein said second ventilation mode includes synchronized intermittent mandatory ventilation with continuous positive airway pressure and pressure support ventilation.

34. The method of claim 26, wherein said second ventilation mode includes pressure controlled ventilation.

5 35. The method of claim 26, wherein said second ventilation mode includes pressure controlled ventilation with continuous positive airway pressure.

10 36. The method of claim 26, further comprising the steps of detecting a disconnect of the ventilator from the patient, and providing intermittent bursts of gas when a disconnect is detected and the ventilator is operating in a mode providing continuous positive airway pressure.

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